circular pier in the centre, around which are a series of open arches with buttresses at each angle of the octagon; the whole effect of this part of the work is particularly light and pleasing. The pedestal is surmounted by a spreading band of very bold foliage, interspersed with figures, some of which, from their costume, seem to be intended to represent the privileged fool of the olden time; around the bowl of the font are eight panels filled with sculpture: the panel in the centre of the elevation has an angel bearing a shield; the next to the right one of the Maries, with the body of Christ after the Crucifixion; the next following, is a mason engaged in carving; the next, the Crucifixion; then another angel bearing a shield; and the three remaining panels contain angels holding scrolls. The whole composition is completed by a plain bold moulding; the font is lined with lead, and has a pipe down the centre pier for letting off the water, but this is now in disuse in consequence of the pipe being stopped up. It is very much to be regretted that some great lover of cleanliness, who was much annoyed by seeing the stains caused by time on the font, had the eyesore removed by the application of sundry coats of paint, which every lover of architecture must deplore. It is much to be wished that something could be done to remove the superfluous coating. There is no document to decide the date of the workmanship, but from its whole character, I should feel inclined to place the date at about the latter part of the fourteenth century. I feel sure that it is quite needless to say any thing as to the beauty of this specimen; it will be allowed by all; but I would advise every person going near the place to see it; it contains many beauties that cannot be given in merely geometrical drawings, however accurate. I visited and delineated it at the request of Mr. Bartholomew, the architect. The elevation and section need no explanation. One half the plan is taken across the top of the font, and the other half across the pedestal, shewing the base and step.—I am, Sir, yours, &c.

W. CAVILER.

ON THE CONSTRUCTION OF HANDRAILS OF STAIRS.

BY MR. GEORGE RIDLEY.

General Remarks.

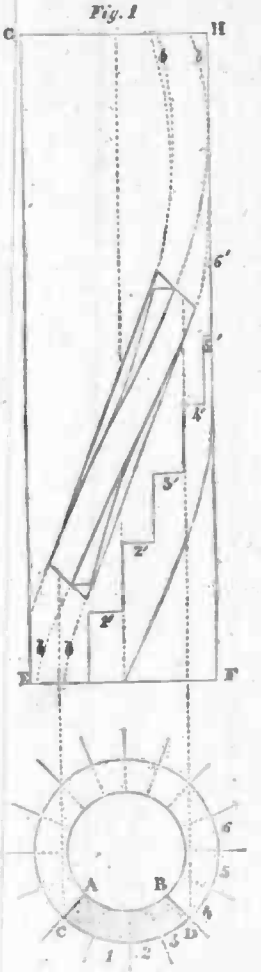
1. In the theory of handrailing, the circular well-hole of a staircase may be compared to a cylindric space, around which the ends of the steps are made to abut: and the wreathed portion of the rail may be said to occupy the position of a spiral quadrilateral solid winding round the cylindric space at an angle of inclination adapted to range parallel to the nosings of the steps immediately underneath.

2. This spiral quadrilateral solid would therefore form a detached portion of a hollow cylinder, circumscribing the cylindric space we have already described. It is formed out of the solid plank, in lengths seldom exceeding one-fourth of the entire revolution around the cylinder, the thickness of the plank being sufficient only to embody within its surfaces the wreathed form of the rail.

3. In its formation, the method of procedure usually adopted is by the application of such moulds to the surfaces of the plank as approximate nearest to the required outline of the quadrilateral solid itself, and which are requisite for the guidance of the workman during the progress of the work.

4. Let the lines A B C D (Fig. 1) represent the base of a portion of this hollow cylinder, whose shell we shall suppose to be formed of wood of the same thickness and radii as are required for the plan of the handrail. Let the lines E F G H represent the elevation of the cylinder, upon the convex and concave surfaces of which are marked off the risers and treads of the radiating steps. Let the points 1 2 3 &c. represent the nosings of the steps, and the lines *b b* the lines of inclination of the handrail. These lines thus drawn upon the shell of the hollow cylinder will shew the position and form of the quadrilateral solid, as embodied in the shell of the hollow cylinder; but as this solid is to be obtained out of plank, it is necessary in practice that the inclination of the plank should be so adapted as not only to comprise within the limits of its surfaces the body of the solid, but also that its fibres should range as nearly as is practicable with the direction of the curve of the rail.

Fig. 1



5. If the thickness of the plank were inserted in the body of this hollow cylinder at the inclination required for that purpose, and the lines of the intersections of the cylindric surfaces, with the plane surfaces of the plank, were marked on the plank, we should, by the removal of the plank from its place in the hollow cylinder at once perceive the position at which the moulds should be marked on the faces of the plank, and the direction in which the vertical surfaces should be cut to form a solid out of the plank similar to the space formed in the hollow cylinder for its reception. The outlines marked on the faces of the plank would represent the section of the cylinder cut by a plane in the direction of the surface of the plank; and the outline thus obtained is well known by the name of *the face-mould*.

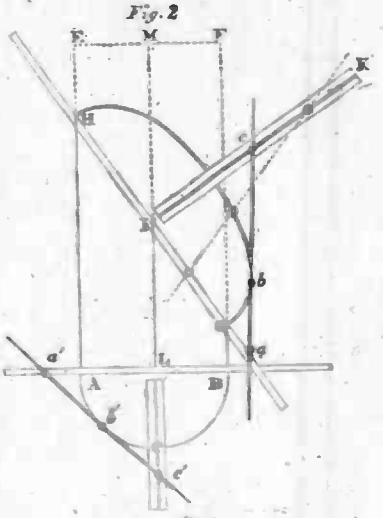
6. From these premises it is clear that the theory of handrailing, as applied to the circular wells of staircases, is to a certain extent depending upon the sections of the cylinder. The cylinder, as every one knows, is a solid body formed by the revolution of a parallelogram round one of its fixed sides; or, in plainer language, a portion of a cylinder may be compared to the space which is passed over by a door revolving upon its hinges. The axial line of this cylindric space is a line conceived to pass vertically through the centres of the hinges, and its base would be represented by the circle which the revolving edge of the door would form upon the floor.

7. By the cylindric sections are understood the sections produced by cutting the cylinder with a plane; thus, a circle is a cylindric section, because if we cut a cylinder parallel to its base, the section would be a circle.

8. Again, if we cut a cylinder by a vertical plane at right angles to its base, the section will be a parallelogram.

9. But the section of the cylinder, as more particularly referred to in our remarks on handrailing, is that of the ellipse, which is produced by a plane cut through the body of the cylinder in an oblique direction. There are various methods of forming the curve of the ellipse upon a plane surface, which our limits prevent us from entering upon; the following method, for the purposes of handrailing, appears to us to be the most effective. Let A B C (Fig. 2) be the

Fig. 2



semi plan of a cylinder, the line M L its axial line, and the parallelogram A B E F the vertical plane passing through the axial line. Let the line G H be the position of a plane cut through the cylinder at right angles to the plane of the parallelogram A B E F; then, to describe the ellipse, or the sectional outline of this cutting plane through the points G H: procure a beam compass with three sliding points: let *a* and *c* represent the two extreme points of the compass, and the intermediate point *b* a sliding-stock in which a black-lead pencil is fixed; make the distance from *b* to *c* equal to half the length of the ellipse, as shewn by G I, and the distance from *a* to *b* equal to the line L C. From the point I draw the line I K at right angles to G H, on each side of the line I K affix two straight edges, leaving a space between in which the point *c* of the beam-compass may slide, and on the side of the line G H place a similar straight edge; having proceeded thus far, place the point *c* of the beam-compass in the groove on the line I K, and the point *a* of the compass on the line G H. Then, by the motion of the beam-compass, as indicated by the dotted line, the pencil in the socket at *b* will describe the section of the cylinder.

10. The surface of a cylinder is also a parallelogram, whose base line is equal in length to the circumference of the cylinder, and the height thereof equal to the height of the

Fig. 3